

PAT-NO: JP407279916A
DOCUMENT-IDENTIFIER: JP 07279916 A
TITLE: MEMBER CONNECTING STRUCTURE
PUBN-DATE: October 27, 1995

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APPL-NO: JP06069784

APPL-DATE: April 7, 1994

INT-CL (IPC): F16B005/00, G11B017/028, G11B033/12

ABSTRACT:

PURPOSE: To realize a structure for connecting a clamper holder to a base without using any screw in the member connection.

CONSTITUTION: A clamper holder 131 is provided with two elastic parts 192, 193 formed by cut parts on one side, and able to be elastically deformed and a bent flap 190. A cut-rising flap 194 is provided on the flap 190. A raised wall part 32 of a base 12 is provided with a notch part 180, and it is provided with projecting parts 182, 183 on its top part. The raised wall part 32 is pinched by pressing the projecting parts 182, 183 in a state where the cut-rising flap 194 is engaged with the notch part 180, and also the elastic parts 192, 193 are elastically deformed.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the structure of starting member connection structure, especially connecting a member and a member.

[0002]

[Description of the Prior Art] In CD-ROM equipment, in order to have connected based on the clasper holder, as shown in drawing 27, **** was used and, generally, the **** stop was carried out.

[0003] As for one, a clasper holder and 2 are the bases among drawing 27.

[0004] The base 2 has flange 2b which it comes to bend from the crowning of starting wall 2a to the method of inside. Tapped hole 2c is formed in this flange 2b.

[0005] The edge of the clasper holder 1 is ****ed, and the stop of it is carried out by **** 3, and it is being fixed to flange 2b (connection).

[0006]

[Problem(s) to be Solved by the Invention] In order to carry out a screw-thread stop, there were the following problems.

[0007] ** Components mark (****) and a processing man day (a tapped hole is formed in the base ****ing stop activity) are required, and cost also goes up.

[0008] ** It ****s and a stop and the dust (dust) which carries out **** outside and sometimes comes out have a bad influence on other components.

[0009] ** The part just under flange 2b serves as dead space, and using for installation of another components becomes difficult.

[0010] Then, this invention aims at offering the member connection structure which solved the above-mentioned technical problem.

[0011]

[Means for Solving the Problem] The 2nd engagement section to which this invention engages with said 1st engagement section of the 1st member in which the 1st engagement section was formed, and said 1st member is formed. And it has the 2nd member in which the elastic section which carries out elastic deformation in contact with said 1st member was formed, said said the 2nd engagement section and said 2nd elastic section of a member pinch said 1st member elastically, and said 2nd member considers as the configuration connected to said 1st member.

[0012]

[Function] The configuration whose the 2nd engagement section and elastic section pinch the 1st member elastically acts so that the 1st member and 2nd member may be connected without backlash, without using ****.

[0013]

[Example]

[An outline configuration and actuation] as shown in drawing 1 thru/or drawing 7, the CD-ROM equipment 10 with which the member connection structure of this invention is applied A chassis 11, the

base 12 attached in the chassis 11, and the movable base assembly 13 attached in the base 12, The tray 14 currently supported by the base 12 and the disk loading drive assembly 15 attached in the base 12, It has a wrap covering member (not shown) for the bottom with the clasper 16 currently supported by the base 12 and the front bezel 17 attached in the front face of a chassis 11.

[0014] The movable base assembly 13 is the configuration that the optical head migration device 23 to which the motor 21 for turntables which makes the movable base body 19 rotate a turntable 20 and a turntable 20, the optical head 22, and the optical head 22 are moved was attached.

[0015] It faces equipping with CD-ROM and CD-ROM equipment 10 is made into the condition which shows in drawing 8 (A).

[0016] That is, a tray 14 is Y2. It moves to a direction and projects outside the body 25 of CD-ROM equipment. Moreover, the movable base assembly 13 inclines caudad.

[0017] An operator lays CD-ROM26 on a tray 14, and does predetermined actuation.

[0018] Thereby, the CD-ROM loading drive assembly 15 starts actuation, and the following two actuation is performed one by one.

[0019] ** Tray 14Y1 It is moved to a direction.

[0020] Thereby, as shown in drawing 8 (B), CD-ROM26 is drawn in the body 25 of CD-ROM equipment.

[0021] ** Then, rotate in the direction in which the movable base assembly 13 becomes level.

[0022] Thereby, as shown in drawing 8 (C), CD-ROM26 is supported on a turntable 20, comes floating from a tray 14, is clamped by the clasper 16, and will be in the condition of becoming reproducible.

[0023] [The configuration of the part about loading of CD-ROM, and playback]

(Base 12) As shown in drawing 1 thru/or drawing 5, the base 12 has the frame configuration of an abbreviation rectangular head, and it has the movable base assembly anchoring section 30 which consists of abbreviation rectangle-like opening, and is Y2. It has the CD-ROM loading drive assembly installation section 31 which becomes direction one end from notching.

[0024] The base 12 is X1 and X2. In direction one end, it has the starting walls 32 and 33, and is Y1. In direction one end, it has the starting rib 34.

[0025] In the four legs 35 which it comes to start, the base 12 is in the condition which floated on bottom plate 11a of the approximately box-like chassis 11 through the insulator 36, is attached and is settled in the chassis 11.

[0026] On the base 12, it is X2 and X1. It is attached so that the tray guide members 37 and 38 may mention later to one end.

[0027] Moreover, a base 12 top and X2 It is the tray extrusion plate 39Y1 and Y2 to one end. It has prepared in the direction movable.

[0028] The tray extrusion plate 39 is Y2 by the spring 40. It is energized by the direction.

[0029] (Movable base assembly 13) As shown in drawing 1 thru/or drawing 5, the movable base assembly 13 has the movable base body 19 of an abbreviation square frame configuration.

[0030] This 19 movable base bodyY2 The motor 21 for turntables has attached in direction one end. The turntable 20 is fixed to the spindle of a motor 21. The turntable 20 is located more nearly up (Z1 direction) than the movable base body 19. Permanent magnet 20a is included in the turntable 20.

[0031] The guide shafts 50 and 51 of a pair have both ends held by attaching parts 52 and 53 in the inferior-surface-of-tongue side of the movable base body 19, and it is Y1 and Y2. It extends in a direction and is attached in parallel.

[0032] Moreover, the optical head 22 is supported by the above-mentioned guide shafts 50 and 51 in both sides, and it is the inside of the opening 54 of the movable base body 19 Y1 and Y2 It has prepared in the direction movable.

[0033] Moreover, the optical head migration device 23 is formed in the movable base body 19. The optical head migration device 23 consists of a motor 55 and a gear device 56 driven by the motor 55.

[0034] The movable base assembly 13 is 19 movable base bodyY1. The flat spring member 56 is minded for direction one end, and it is the 12 baseY1. It is attached in direction one end and has attached in the attachment section 30, and when the flat spring member 56 bends, it may rotate in A and the

direction of B among drawing 3.

[0035] 19 movable base body Y2 X1 of a direction edge, and X2 To the center on a direction, a pin 57 is Y2. It has projected and prepared in the direction.

[0036] A pin 57 is the 12 base Y2 so that it may mention later. It is push this slack to the flat spring member 42 attached in the beam section 41 near the direction edge.

[0037] (Tray 14) A tray 14 has the dished CD-ROM installation section 60 in which CD-ROM is laid as shown in drawing 5, and is Y1. It has the arms 61 and 62 of the both sides which extend in a direction and an arm 61, and the beam section 63 that connects between 62, and has further the opening 64 to which a turntable 18 and the optical head 22 fit in in the center.

[0038] Furthermore, a tray 14 is X1 and X2. Along with a side edge, it has the flanges 65 and 66 of the ** length who fell by one step, respectively.

[0039] A tray 14 is X1 as shown in drawing 9. In one end, it has the KAIDO slot 67 and a projected part 68.

[0040] Moreover, a tray 14 is X2 of a rear face. It has the guide slot 69, the rack 70 as a gear side, heights 71, the contact sides 71a and 71b, and the engagement section 73 in a direction side.

[0041] The hole 74 is formed in the above-mentioned arm 62 near the engagement section 73.

[0042] A tray 14 carries out fitting of the guide slot 67 to the projected part 75-1 to 75-3 of 3 reams of the tray guide member 38, as shown in drawing 2 and drawing 1. Fitting of the guide slot 68 is carried out to the projected part 76-1 to 76-3 of 3 reams of the tray guide member 37. Guide both sides and the presser-foot-arm section 77-1 to 77-3 of 3 reams of the tray guide member 38 presses down a flange 65. The presser-foot-arm section 78-1 to 78-3 of 3 reams of the tray guide member 37 presses down a flange 66, both sides can be pressed down, and it is Y1 and Y2. It can slide on a direction.

[0043] A tray 14 is the discharge location P1 which shows CD-ROM26 to removable drawing 8 (A). Stowed position P2 which contains CD-ROM26 in the body 25 of CD-ROM equipment and which shows drawing 8 (B), (C) and drawing 1, and drawing 2 It slides on between.

[0044] The rack 70 has geared with the gear 96 mentioned later.

[0045] (CD-ROM loading drive assembly 15) As shown in drawing 7, drawing 6, drawing 1, and drawing 2, an assembly 15 has the base plate 90 which supports each part article.

[0046] In this base plate 90, it is X1. The loading motor 91 is attached in the direction approach side, and it is X2. Gears 92-96 and the rotation base 97 are attached in the direction approach side, and it is Y1. The slider 100 is attached in direction one end.

[0047] Gears 92-96 constitute a reduction gear device. Gears 93 and 95 are two steps of gears. The gear 96 of the last stage of a reduction gear device has geared with the above-mentioned rack 70.

[0048] The gear 93 and the gear 96 are supported by the pin 101 on a base plate 90.

[0049] The color 104 has fitted into the shaft 103 fixed to the pulley 102 pivotable, and the gear 92 is fixed to it in the upper part of a shaft 103.

[0050] The color 104 is located in the Sai chief opening 105 currently formed in the base plate 90. The **** opening 105 is extended and formed in the direction left to a pin 101. Circular opening 105a is formed at the end of the **** opening 105.

[0051] 106 is an emergency arm, is attached in the inferior surface of tongue of a base plate 90 rotatable centering on the pin 107, and is counterclockwise energized with the spring 108. The edge of U character-like notch 106a of an arm 106 has fitted into the part below slot 104a of the shape of a ring of the periphery of a color 104.

[0052] It is pushed by the arm 106 and a color 104 is usually the location (orientation) Q1 of the method of the back of the Sai chief opening 105. It is located and slot 104a is engaging with the deep pool of the Sai chief opening 105.

[0053] Thereby, the gear 92 has geared with the gear 93.

[0054] The rotation base 97 is formed rotatable, carrying out fitting of the hole 97a to a pin 101, and making stop claw part 97b engage with the circular slit 109 of a base plate 90, and a base plate 90 cutting circular slit 97c, making it engage with the lifting lug 110, and the float from a base plate 90 being restricted. The rotation base 97 has 97d of gear sections in alignment with the radii centering on

hole 97a. Moreover, it fits into a pin 111 and a gear 94 is supported, and it fits into a pin 112 and the gear 95 is supported by the rotation base 97.

[0055] The gear 94 has geared on the gear 93. The gear 95 has geared on the gear 94 and the gear 96.

[0056] Moreover, the arm guide 113 is attached in arm guide attachment section 97e which consists of a piece of starting of the pair of the rotation base 97.

[0057] The stop claw parts 100a and 100b of a pair are made to engage with the slit 114,115 of a base plate 100, and a slider 100 is X1 and X2. It has attached in the direction possible [sliding].

[0058] Moreover, the slider 100 had rack section 100c, and this has geared with the 97d of the above-mentioned gear sections.

[0059] Moreover, a slider 100 has 100d of starting walls. Inclination long hole 100e is formed in 100d of this starting wall.

[0060] Moreover, the inferior-surface-of-tongue side of a base plate 90 is built over the belt 117 between the pulley 116 of a motor 91, and the above-mentioned pulley 102.

[0061] Moreover, 118 is a tray lock arm, it has the stop projected parts 118a and 118b of a pair, and stop projected part 118c, and in 118d of holes, fitting of it is carried out to the pin 119 on a base plate 90, it has attached them, and rotation energization is counterclockwise carried out with the torsion coiled spring 120.

[0062] As shown in drawing 1 and drawing 2, the assembly 15 of the above-mentioned configuration *****s and carries out the stop of the both-ends side of a base plate 90 to the base 12, and has settled for it and attached it in the anchoring section 31 in drawing 5.

[0063] The gear 96 has geared with the rack 70. Moreover, the pin 57 has fitted in in inclination long hole 100e.

[0064] here, CD-ROM equipment 10 is mentioned later -- as -- a gear 96 -- 360 degrees or more, about 1.3 [for example,], -- rotating -- a tray 14 -- discharge location P1 from -- a stowed position P2 -- since it is considering as the configuration to which it is made to move to </SUB> -- path D1 of a gear 96 It is about 31mm and is small compared with the conventional thing.

[0065] For this reason, superficial magnitude LX xLY of the inside of drawing 1, and an assembly 15 Compared with the conventional thing, it is small.

[0066] (A clamber 16 and part relevant to this) As shown in drawing 5, drawing 1, drawing 3, and drawing 2, the circular griddle 130 is fixed to the top face, and the clamber 16 is held by the clamber stopper 133 fixed to the part of the opening 132 of the center of the clamber holder 131 by the clamber holder 131.

[0067] The clamber holder 131 has the shape of a rectangle, and has attached it ranging over between the starting walls 32 and 33 of the both sides of the base 12.

[0068] (Front bezel 17) As shown in drawing 5, the front bezel 17 has opening 140, the clap 141 which plugs up this opening 140, the emergency hole 142, and operating button 143 grade, and has attached them in the chassis 11.

[0069] (in addition to this) Stop projected part 118c of the tray lock arm 118 and the arm guide 113 are a location U1 about the rotation base 97. The rotation base lock device 150 to lock is constituted. Two stop projected parts 118a and 118b of the tray lock arm 118 and the heights 71 of a tray 14 are a location P2 about a tray 14. The device 160 to lock is constituted.

[0070] (CD-ROM loading actuation) Next, actuation of the CD-ROM equipment 10 of the above-mentioned configuration is explained.

[0071] Actuation explains the condition of drawing 8 (A) as first condition.

[0072] In the state of the beginning, each part is in the condition of explaining below.

[0073] A slider 100 is X1. Location S1 slid to the direction It is located.

[0074] The rotation base 97 is the rotation location U1 shown in drawing 7. It is located.

[0075] Stop projected part 118c of drawing 11 has stopped the arm guide 113, the rotation base lock device 150 is in an ON state (refer to drawing 10 (E)), and the rotation base 97 is the rotation location U1. It is locked and counterclockwise rotation is restricted.

[0076] A tray 14 is the discharge location P1. It is located and the CD-ROM installation section 60 is

exposed out of the body 25 of equipment.

[0077] The tray lock device 160 is in an off condition, and a tray 14 is Y1. It is movable in a direction.

[0078] The movable base assembly 13 is the location V1 which inclined in the slanting lower part. It is located.

[0079] (CD-ROM receipt actuation) An operator lays CD-ROM26 in the CD-ROM installation section 60, and pushes an operating button 143.

[0080] Thereby, as shown in drawing 10 (A), a motor 91 starts and rotates normally.

[0081] Rotation of a motor 91 is slowed down and transmitted through the belt 117 -> pulley 102 -> gear 93 -> gear 94 -> gear 95, and a gear 96 rotates it clockwise. Since it is locked, the rotation base 97 is a location U1. It is maintained.

[0082] As a rack 70 drives by rotation of a gear 96 and a tray 14 shows drawing 10 (D), it is an arrow head Y1. It begins to move to a direction.

[0083] a gear 96 -- about 1.3 -- rotating -- a tray 14 -- location P2 up to -- it is moved and CD-ROM26 is contained in the body 25 of equipment.

[0084] (CD-ROM clamp actuation) A tray 14 is a location P2. A location to the last location P2 The following two actuation is performed in the process which moves.

[0085] ** As shown in drawing 12, the contact side 72 of the heights 71 of a tray 14 contacts stop arm 118b of the tray lock arm 118, and push and the tray lock arm 118 resist a spring 120, and rotate this clockwise.

[0086] Thereby, heights 118c separates from the arm guide 113, and as shown in drawing 10 (E), the rotation base lock device 150 serves as OFF.

[0087] ** When the tray lock arm 118 rotates clockwise, similarly, as shown in drawing 12, stop projected part 118a counters contact side 71b, and the stop projected parts 118a and 118b are 71 heights Y1 of a tray 14, and Y2. On a direction, an edge is countered and heights 71 are inserted.

[0088] Thereby, as shown in drawing 10 (E), the tray lock device 160 serves as ON.

[0089] If the rotation base lock device 150 becomes off, the rotation base 97 will become counterclockwise rotatable.

[0090] A tray 14 is Y1 when the tray lock device 160 serves as ON. A direction and Y2 Migration of a direction is restricted and it stops rotating a gear 96 more than it.

[0091] A motor 91 continues rotating normally still more.

[0092] Thereby, a gear 95 begins to roll the surroundings of a gear 96, and as shown in drawing 13, the rotation base 97 rotates counterclockwise.

[0093] the rotation base 97 is shown in drawing 10 (C) within the limits of the circular slit 109 -- as -- location U2 up to -- it rotates.

[0094] when the rotation base 97 rotates as mentioned above, 97d of gear sections drives rack section 100c, and a slider 100 shows drawing 13 and drawing 10 (B) -- as -- X2 a direction -- location S2 up to -- it slides.

[0095] Slider 100X2 If it slides on a direction, inclination long hole 100e will push up a pin 57, and the movable base assembly 13 will rotate in the direction of A, as shown in drawing 10 (G). finally, the edge of inclination long hole 100e is level -- level location V2 which will be in the condition that long hole section 100e-1 guides a pin 57, and shows the movable base assembly 13 to drawing 3 up to -- it rotates.

[0096] The movable base assembly 13 is a location V2. In the last process in which it results, a turntable 20 raises CD-ROM26 a little from the CD-ROM installation section 60 of a tray 14 in support of near the feed hole of CD-ROM26.

[0097] Moreover, a turntable 20 is magnetically adsorbed in a clamber 16, and CD-ROM26 will be in the condition of it having been clamped by the clamber 16 on the turntable 20, and having been supported.

[0098] the slider 100 when CD-ROM26 is clamped on a turntable 20 -- above location S2 up to -- when it slides, the switch 169 in drawing 1 operates, and a motor 91 stops, as shown in drawing 10 (A).

[0099] Loading of CD-ROM26 is completed by the above.

[0100] Then, a motor 21 starts, CD-ROM26 rotates, and the optical head 22 is reproduced.

[0101] **** -- location V2 where the movable base assembly 13 is level up to -- as it is in the rotated condition and is shown in drawing 14, to flat spring 42, a pin 57 can depress per push and a tip elastically caudad, as an arrow head 170 shows, and a pin 57 has it -- it is made to have not produced the backlash to long hole section 100e-1 [level]

[0102] Thus, the movable base assembly 13 is the inside by the side of a tip, X1, and X2. On a direction, since it is fixed in the condition that a central location is fixed and there is moreover no backlash, the movable base assembly 13 is supported by stability to the base 12. Therefore, playback of CD-ROM26 is also carried out to stability.

[0103] The loading motor 91 reverses the actuation which carries out unloading of CD-ROM26, and discharges it, and each above-mentioned device is performed by operating to hard flow by the reverse order with the time of the above-mentioned loading.

[0104] That is, it operates as follows.

[0105] ** The rotation base 97 rotates clockwise and 100 is a slider X1. It slides on a direction and the movable base assembly 13 is a location V1. It rotates. Thereby, CD-ROM26 has a clamp canceled and is laid on a tray 16.

[0106] ** the rotation base 97 -- location U1 up to -- if it rotates, as shown in drawing 15, the tray lock arm 118 will rotate counterclockwise, the rotation base lock device 150 will serve as ON, and the tray lock device 160 will serve as OFF.

[0107] ** tray 16Y2 a direction -- location P1 up to -- it is moved.

[0108] Thereby, D-ROM26 is discharged out of the body 25 of CD-ROM equipment.

[0109] a tray 14 -- location P1 up to -- if moved, as for push and a motor 91, a projected part 68 will suspend a switch 171.

[0110] Moreover, as shown in drawing 11, when the engagement section 73 of a tray 14 stops to stop projected part 118b, the ejection of a tray 14 is restricted.

[0111] In addition, by removing the top plate of the body of CD-ROM equipment, inserting a screwdriver in a hole 74 if needed, and rotating push and the tray lock arm 118 for stop projected part 118b clockwise, the engagement section 73 has a stop canceled and can sample a tray 14 from the body 25 of CD-ROM equipment.

[0112] [CD-ROM extraordinary discharge device] Drawing 16 and drawing 17 are drawings which saw the CD-ROM loading drive assembly 15 of drawing 6 from the bottom. Drawing 16 usually shows the condition at the time. Drawing 17 shows the condition at the time of CD-ROM extraordinary discharge actuation.

[0113] As shown in drawing 17 and drawing 16, the emergency arm 106 has arm section 106b, arm section 106c, and 106d of push sections other than notch 106a. Arm section 106b is located in the location which counters the emergency hole 142 of the front bezel 17. 106d of push sections is formed in the inlet-port section of U character-like notch 106a. Arm section 106c is provided so that the rotation locus 172 centering on a pin 107 may serve as an outside [b / stop claw part 106].

[0114] Moreover, tray 14Y1 It moves to a direction and is a location P2. As the projected part 173 (refer to drawing 9) of the inferior surface of tongue of a tray 14 contacts piece of starting 39a of the tray extrusion plate 39 and the last phase of resulting is shown in drawing 1, it is the tray extrusion plate 39Y1. The direction is made to do dimension a migration of.

[0115] Thereby, a tray 14 is a spring 40Y2. It is in the condition of having been energized by the direction.

[0116] In performing extraordinary discharge of CD-ROM, an operator thrusts in the rod part material 174 in CD-ROM equipment 10 through a hole 142, as hand control shows to drawing 1.

[0117] By this, an arm 106 has arm section 106b pushed by the rod part material 174, resists a spring 108, and it reaches clockwise among drawing 7, and is rotation **** to the counterclockwise rotation in drawing 16. An arm 106 is rotated to the condition shown in drawing 17.

[0118] When an arm 106 rotates, the following two actuation is performed.

[0119] ** 106d of push sections -- a color 104 -- push and a color 104 -- location Q1 of the inner of the

Sai chief opening 105 from -- it moves in the direction of an outlet -- making -- location Q2 It is made to move.

[0120] Thereby, a gear 92 separates from a gear 93 and the engagement to the gear 93 of a gear 92 is canceled.

[0121] location Q1 of a color 104 from -- location Q2 Migration is made with elongation of the some of a belt 117. ** Arm section 106c stops stop claw part 100b, and it is this X1 It pushes on a direction. thereby -- slider 100X1 a direction -- location S1 up to -- it slides.

[0122] The next actuation is made when a slider 100 slides.

[0123] first, sliding of a slider 100 -- the movable base assembly 13 -- the direction of B in drawing 3 -- location V1 up to -- it rotates and considers as slanting facing down.

[0124] A turntable 20 carries out downward moving, and CD-ROM26 has a clamp canceled, and the support on a turntable 20 is canceled, and it is supported by the CD-ROM installation section 60 of a tray 14.

[0125] moreover, slider 100X1 a direction -- location S1 up to -- by sliding shows to drawing 15 -- as -- the rotation base 97 -- clockwise -- location U1 up to -- it rotates. the rotation base 97 -- location U1 up to -- when it rotates, the tray lock arm 118 rotates counterclockwise with a spring 120, stop section 118a separates from contact side 71b, and the tray lock device 160 is canceled.

[0126] When the tray lock device 160 is canceled, it is pushed by the spring force of the spring 40 which the tray 14 is elongating with the tray extrusion plate 39, and is Y2. It is moved to a direction and only the dimension a used as grip cost is extruded besides the body 25 of CD-ROM equipment.

[0127] When an operator holds and lengthens after this the tray 14 projected from the body 25 of CD-ROM equipment, a tray 14 is pulled out from the body 25 of CD-ROM equipment, and extraordinary discharge of CD-ROM26 is carried out.

[0128] When a tray 14 is extruded with a spring 140 by ***, migration of a tray 14 is made rotating a gear 96 with a rack 70.

[0129] Here, the gear 92 is separated from the gear 93, and since the engagement to the gear 93 of a gear 92 is canceled, it has the following effectiveness.

[0130] ** The force of pushing the rod part material 174 is small, and ends.

[0131] It is a location U1 about the rotation base 97. When making it rotate, a gear 95 rolls the perimeter of a gear 96. Although rotation of the gear 95 at this time gets across to the gear 94 -> gear 93, it does not get across to a gear 92. That is, rotation of a gear 95 is not transmitted to the stopped loading motor 91, and the loading motor 91 does not serve as a load. therefore, compared with the case where it carries out rotating the loading motor 91, the above-mentioned rotation of the rotation base 97 is boiled markedly, and is made by the small force.

[0132] consequently, compared with the case where it carries out rotating the stopped loading motor 91, the force which pushes in the rod part material 174 is alike and small, and ends, and the actuation which carries out CD-ROM extraordinary discharge is smoothly made with sufficient workability.

[0133] ** Even if a spring 40 is weak, extrusion of a tray 14 is made certainly.

[0134] 14 tray Y2 Migration in a direction is performed with a rack 70, rotating a gear 96. Since rotation of a gear 96 is not transmitted to the loading motor 91 by ***, the rotation load of a gear 96 is small. Therefore, even if a spring 40 is weak, a tray 14 is extruded certainly.

** The drawer of a tray 14 can be performed by the light force.

[0135] Since [same with the above-mentioned **] the rotation load of a gear 96 is small, a tray 14 is pulled out by the light force. Moreover, a tray 14 can be pulled out, without making it run the stretched belt 117 forcibly.

[0136] In addition, after pulling out a tray 14, the rod part material 174 is drawn out.

[0137] If the rod part material 174 is drawn out, the emergency arm 107 will carry out a rotation return to the original location shown in drawing 16 with a spring 108.

[0138] By this, as shown in drawing 16, 106d of push sections separates from a color 104, and a color 104 is the original location Q1 by the tension of a belt 117. It is returned.

[0139] Thereby, the gear 92 which had separated by the gear 93 approaches a gear 93, and gears on a

gear 93 again.

[0140] Since a gear 92 approaches the peripheral surface of a gear 93 and gears with a gear 93, the engagement by the gear 93 of a gear 92 is made smoothly.

[0141] By ***, the crowning of the gear tooth of a gear 92 contacts the crowning of the gear tooth of a gear 93, and even if it changed into the condition that a gear tooth does not gear with a gear tooth, when a gear 93 begins to rotate by the motor 91, as for the engagement by the gear 93 of interlocking and a gear 92, a gear tooth and a gear tooth are immediately made certainly normally by loading actuation by chance.

[Attachment structure of the clamber holder 131 which is one example of the member connection structure of this invention] The 1st member and the clamber holder 131 constitute [the base 12] the 2nd member.

[0142] As shown in drawing 18, the notch 180 as the 1st engagement section is formed in the base side at the starting wall 32 of the base 12.

[0143] The circular heights 181 form in the center and the circular heights 182,183 and heights 184,185 are formed in the crowning of the starting wall 32 at these both sides.

[0144] Another starting wall 33 is also the same configuration as the above.

[0145] It has the bending flange 190, and it forms in the center by opening 191, it is relatively formed in these both sides by slitting, and the end side of the clamber holder 131 has the elastic section 192,193 which can carry out elastic deformation, is further cut as the 2nd engagement section which cuts inside to a flange 190 and it comes to start, and has the piece 194 of a lifting.

[0146] The other end side of the clamber holder 131 also has the same configuration as the above.

[0147] The clamber holder 131 is Z2. As by pushing against a direction shows to drawing 19 and drawing 20, it fits in among heights 184 and 185, location regulation is carried out, and it constructs across horizontally among the starting walls 32 and 33, and a flange 190 rises, the lateral surface of a wall 32 is countered, it cuts, the piece 194 of a lifting engages with a notch 180, and the elastic section 192,193 is countered and attached in the lateral surface of the starting wall 32, respectively.

[0148] As shown in drawing 21 (A), it cuts and the piece 194 of a lifting is engaging with the notch 180.

[0149] As shown in drawing 21 (B), elastic deformation of the elastic piece 192,193 was carried out, and it has pushed and hit the circular heights 182,183, respectively.

[0150] As shown in drawing 21 (C), the clearance 195 exists between the crowning of the starting wall 32, and the clamber holder 131.

[0151] Therefore, the clamber holder 131 is attached, where it cut and the starting wall 32 is elastically pinched by the piece 194 of a lifting, and the elastic section 192,193.

[0152] Moreover, as shown in drawing 20 and drawing 21 (A), opening 191 has fitted into the circular heights 181, and marginal 191a of opening 191 is in contact with heights 181.

[0153] For this reason, as it is shown for example, and the starting wall 32 shows with a two-dot chain line among drawing 21 (A) owing to the downward force W having acted on the beam section 41 of the base 12, even if it is the case where it is going to incline in the inner direction, it is restricted that the starting wall 32 inclines to the inner direction. A notch 180 cutting and separating from the piece 194 of a lifting by this, is prevented.

[0154] [Attaching structure of a tray guide member] Three projected parts 76-1, 76-2, and 76-3 set spacing on the elongated-shaped body 200, and the tray guide member 37 is provided in it so that it may expand to drawing 22 and drawing 23 and may be shown.

[0155] Corresponding to each projected part 76-1, 76-2, and 76-3, the presser-foot-arm section 78-1, 78-2, and 78-3 are prepared.

[0156] A cross section has a L character configuration and a body 200 consists of base section 200a and starting wall 200b.

[0157] A member 37 has two pieces 201,202 of engagement further to the part corresponding to a projected part 76-1 and 76-2, respectively. The piece 201,202 of engagement is projected from base section 200a to the side.

[0158] A member 37 has three convex steps 203,204,205 further to the part corresponding to a projected part 76-1, 76-2, and 76-3, respectively. The convex steps 203-205 are projected from starting wall 200b to the side.

[0159] A member 37 has the hook section 206 as the 3rd engagement section further. The hook section 206 is Y2 from the projected part 76-2 among base section 200a, and the part between 76-3. It consists of arm 206a which has comparatively long die-length b which extends in a direction, and claw part 206b at the tip of arm 206a. Arm 206a is Z1 and Z2. It may bend in a direction.

[0160] It rises in the base 12 from the base body section 210, and opening 211,212,213 is formed in it ranging over the wall 33 so that it may expand to drawing 22 and may be shown. Opening 211,213 is formed by the arrangement corresponding to arrangement of the projected part 76-1 of the above-mentioned tray guide member 37, 76-2, and 76-3, respectively.

[0161] The base body section 210 has the overhang section 214,215 to the part which attends opening 211,212.

[0162] Each opening 211,212,213 has a notch 216,217,218 into the part of the starting wall 33.

[0163] Moreover, opening 212 has the deep pool section 219.

[0164] Moreover, the reserve opening 220 is formed in the base body section 210 near the above-mentioned deep pool section 219.

[0165] The tray guide member 37 of the above-mentioned configuration is Z2. **** in a direction and fitting of the piece 201,202 of engagement is carried out to opening 211,212, respectively. Carry out fitting of the convex steps 203,204 and 205 by opening 211,212, respectively, and fitting of the claw part 206b is carried out to the reserve opening 220. It considers as the condition of having contacted this, without base section 200a floating from the top face of the base body 210, and starting wall 200b having risen and having contacted the medial surface of a wall 33, and is next and Y2. By carrying out actuation made to slide to a direction It is attached in the base 12 as shown in drawing 24 , drawing 25 , drawing 26 (A), (B), and (C).

[0166] That is, the piece 201,202 of engagement dives into the overhang section 214,215 bottom, respectively, and the convex step 203,204,205 is engaging with the notch 216,217,218, respectively, and the tray guide member 37 is forced on the base body section 210, and it is Y2. The variation rate to a direction is restricted.

[0167] Moreover, the arm 207,208 which supports the piece 201,202 of engagement pushed on the edges 211a and 212a of opening 211,212, respectively, and has hit, and the tray guide member 37 is forced on the medial surface of the starting wall 33.

[0168] Claw part 206b overcame ejection and a part 223 from the reserve opening 220 with bending of arm 206a, fitted into opening 212, and has stopped the deep pool 219, and the tray guide member 37 is Y1. The variation rate to a direction is restricted.

[0169] [Modification] Drawing 27 shows the modification of the attaching structure to the base of a clasper holder.

[0170] In bending flap 190A, clasper holder 131A has been two and has lifting piece 194A-1,194A-2.

[0171] Further, clasper holder 131A is cut and has elastic section 192A of 1 in the location between lifting piece 194A-1,194A-2.

[0172] It cuts and lifting piece 194A-1,194A-2 engage with notch 180of base 12A A, and clasper holder 131A is in two conditions to which elastic section 192A of 1 pushed and hit heights 182A of the crowning of starting top 32A of base 12A, and is attached in starting wall 32of base 12A A.

[0173]

[Effect of the Invention] As explained above, according to this invention, it has the following features.

[0174] ** It twists off, and by ****ing, a stop activity becomes unnecessary, and reduction of components mark and a processing man day can be performed, therefore cost can reduce sharply.

[0175] ** It ****s, and carries out a stop and **** outside, and powder-like dust does not arise according to an activity, therefore powder-like dust does not have a bad influence on other members.

[0176] ** The 1st member does not have the need of preparing the flange for forming a tapped hole, and, therefore, can utilize the tooth space near the 1st member effectively. This tooth space is used for

installation of the tray guide members 37 and 38 in the above-mentioned example.

[Translation done.]

* NOTICES *

JPO and INPIT are not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.**** shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the top view showing it, assuming the CD-ROM equipment with which one example of the member connection structure of this invention is applied that a tray is transparent.

[Drawing 2] It is the front view showing the CD-ROM equipment of drawing 1 where a front bezel is removed.

[Drawing 3] III-III in drawing 1 It is the sectional view which meets a line.

[Drawing 4] The inside of drawing 1 , and IV-IV It is the sectional view which meets a line.

[Drawing 5] It is the decomposition perspective view of the CD-ROM equipment (a CD-ROM loading drive assembly is omitted and shown) of drawing 1 .

[Drawing 6] It is the top view taking out and showing the CD-ROM loading drive assembly in drawing 1 .

[Drawing 7] About the CD-ROM loading drive assembly of drawing 6 , it is an arrow head VII. It sees and is the shown decomposition perspective view.

[Drawing 8] It is drawing explaining CD-ROM loading actuation of the CD-ROM equipment of drawing 1 .

[Drawing 9] It is the perspective view showing the condition of having carried out both-sides reversal of the tray.

[Drawing 10] It is drawing explaining the actuation at the time of CD-ROM loading actuation of each part of the CD-ROM equipment of drawing 1 .

[Drawing 11] It is drawing showing the condition before the CD-ROM loading actuation initiation which shows a CD-ROM loading drive.

[Drawing 12] It is drawing showing a condition when a tray moves to a stowed position.

[Drawing 13] After a tray moves to a stowed position, it is drawing showing the condition that the rotation base rotated.

[Drawing 14] It is drawing showing the condition that the movable base assembly rotated to the horizontal position.

[Drawing 15] It is drawing showing the condition immediately after discharge actuation initiation of CD-ROM.

[Drawing 16] It is the bottom view of a CD-ROM loading drive assembly.

[Drawing 17] It is drawing explaining CD-ROM extraordinary discharge actuation.

[Drawing 18] It is drawing which the clamper holder in drawing 5 and the base are made to correspond, expands, and is shown.

[Drawing 19] It is drawing showing the anchoring condition to the base of a clamper holder.

[Drawing 20] It is the top view showing the anchoring condition to the base of a clamper holder.

[Drawing 21] It is the sectional view showing the anchoring condition to the base of a clamper holder.

[Drawing 22] It is drawing which a tray guide member and the base are made to correspond and is shown among drawing 5 .

[Drawing 23] It is drawing showing the tray guide member in drawing 22 .

[Drawing 24] A tray guide member is the perspective view showing the condition of being attached in the base.

[Drawing 25] XXV-XXV in drawing 24 It is the sectional view which meets a line.

[Drawing 26] A tray guide member is the sectional view showing the condition of being attached in the base.

[Drawing 27] It is drawing showing the modification of the attaching structure of a clamper holder.

[Drawing 28] It is drawing showing the conventional example.

[Description of Notations]

10 CD-ROM Equipment

11 Chassis

12 Base (1st Member)

13 Movable Base Assembly

14 Tray

15 CD-ROM Loading Drive Assembly

16 Clamper

17 Front Bezel

19 Movable Base Body

20 Turntable

20a Permanent magnet

21 Motor for Turntables

22 Optical Head

23 Optical Head Migration Device

25 Body of CD-ROM Equipment

26 CD-ROM

30 Movable Base Assembly Anchoring Section

31 CD-ROM Loading Drive Assembly Anchoring Section

32 33 Starting wall

34 Starting Rib

35 Arm

36 Insulator

3 7 38 Tray Guide Member

39 Tray Extrusion Plate

40 Spring

41 Beam Section

42 Flat Spring Member

50 51 Guide shaft

52 53 Attaching part

54 Opening

55 Motor

56 Gear Device

56 Flat Spring Member

57 Pin

60 CD-ROM Installation Section

61 62 Arm

63 Beam Section

64 Opening

65 66 Flange

67 KAIDO Slot

68 Projected Part

69 Guide Slot

70 Rack

71 Heights
71a, 71b Contact side
73 Engagement Section
74 Hole
75-1, 75-3, 76-1 to 76-3 Projected part
77-1 to 77-3, 78-1 to 78-3 Presser-foot-arm section
90 Base Plate
91 Loading Motor
92-94 Gear
95 Gear
96 Gear
97 Rotation Base
97a Hole
97b Claw part
97c Circular slit
97d Gear section
97e Arm guide attachment section
100 Slider
100a, 100b Stop claw part
100c Rack section
100d Starting wall
100e Inclination long hole
100e-1 Level long hole section
101 Pin
102 Pulley
103 Shaft
104 Color
105 ** Length Opening
105a Circular opening
106 Emergency Arm
106a U character-like notch
106b, 106c U character-like arm section
106d U character-like push section
107 Pin
108 Spring
109 Circular Slit
110 Cut and it is Lifting Lug
111,112 Pin
113 Arm Guide
114,115 Slit
116 Pulley
117 Belt
118 Tray Lock Arm
118a, 118b, 118c Stop projected part
119 Pin
120 Torsion Coiled Spring
130 Circular Griddle
131 Clamper Holder (2nd Member)
132 Opening
133 Clamper Holder
140 Opening

141 Flap
142 Emergency Hole
143 Operating Button
150 Rotation Base Lock Device
160 Tray Lock Device
169 Switch
170 Arrow Head
171 Switch
172 Rotation Locus
173 Projected Part
174 Rod Part Material
180 Notch (1st Engagement Section)
181,182,183 Circular heights
184,185 Heights
190 Bending Flange
191 Opening
192,193 Elastic section
194 Cut and it is Piece of Lifting (2nd Engagement Section).
195 Clearance
200 Body
200a Base section
200b Starting wall
201,202 Piece of engagement
203,204,205 Convex step
206 Hook Section
206a Arm
206b Claw part
207,208 Arm
210 Base Body Section
211,212,213 Opening
214,215 Overhang section
216,217,218 Notch
219 Deep Pool Section
220 Reserve Opening
221,222 Edge

[Translation done.]